

A NOTE ON *ARADUS DEBILIS* UHLER.
(Hemiptera: Aradidae).*

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The industrial revolution has been held to account for much that is deplorable in modern life, from the low state of contemporary art to the low birth-rate among the intelligentsia; and however debatable this notion may be in certain of its aspects there can be no denying that the machine and the factory have contributed essentially in the development of urban civilization, the settlement of the continent, and the destruction of natural conditions. As a consequence the native fauna of America is undergoing extensive modification—a few species adapting themselves to the new environment by living in human habitations or preying on the crops of the agriculturist, but by far the greater number disappearing forever as their haunts are violated in the advance of progress and improvement—and this modification is nowhere better illustrated than by the Aradidae. Living for the most part under the dead bark of trees in definite stages of decay, these insects are already well on the way to extinction; indeed, it is now impossible to find them in many areas where they were formerly abundant, and even in parks and preserves the prompt removal of fallen trees and branches prevents their survival. It was with some such ideas in mind that I composed my "*Essay on the American Species of Aradus*" (Trans. Am. Ent. Soc., XLVII: 1-106, 1921), believing that the future would have little to add to the annals of this group through the results either of collecting or of taxonomic analysis. And this perhaps somewhat bold assumption of relative finality has been largely borne out by the experience of the last three years: no undescribed species or other novelty of importance has come to light. But it is to be expected that from time to time new data will be brought forward (often based on old but hitherto unrecorded material) to modify especially our conception of the distribution of species; and such is the case in the present instance.

Aradus debilis Uhler has been found in British Columbia and the western states of Washington, Idaho, Montana, Colorado and

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California, often in some abundance, but no specimen has been authentically reported from the rest of Canada or from the central states. However, I have seen and recorded doubtfully (as probably mis-labeled) a single individual from Massachusetts, maintaining that this "is most distinctly a western species"; and recently some new evidence has come in, which goes far to indicate that *debilis* is really at home in the east. While identifying the Aradids of the New York State Museum I found three specimens of this species taken at Albany in 1914 by Mr. D. B. Young, who is now assistant state entomologist. In reply to my inquiry he writes that they were taken in a piece of woodland slightly southwest of the city "and furthermore, no Aradids were received from the west in the year 1914." Thus it appears that *A. debilis* must be added to the eastern fauna, as one of the rarest species in this region. Whether or not it could have been brought hither in untrimmed logs is a question, but the march of progress has doubtless done away with this possibility for the future. The species is easily distinguished by striking characters—especially by its very long and slender antennae, with the third segment largely pale; and it is hoped that collectors will look for it in the woods as well as in their collections, so that the problem of its distribution may be solved before dead pines with their accompanying fungi have disappeared forever. The habits of *debilis* have been most excellently described in an article by H. G. Hubbard (Can. Ent., XXIV: 250-255, 1892).

Biological Note on *Plea striola* Fieb.

This minute back-swimmer has been briefly referred to by Dr. Hungerford in his "*Biology of Waterbugs*."

In 1903 I had a few *Plea* in an aquarium, and on July 26 one nymph came to the last molt. Seven specimens put in the aquarium on July 25 gave a nymph emerged on August 13, 19 days later. Eggs were found inserted in the soft tissue of plants; and a sketch made at the time agrees in shape with Dr. Hungerford's description (p. 179). The sculpturing is also the same.

These brief notes are offered as independent confirmation of the facts developed by this author.

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